



Sandwell Academy

Advanced General Certificate of Education (AS and A2) Computer Science

WHY COMPUTER SCIENCE?

Students who choose to study Computer Science have the ability to move into many different studies at university and careers in a wide range, due to the range of skills that will be learnt. Students can move on to Higher Education courses and careers in the following areas:

Computer Forensics
Engineering
Electronics

Cryptology
IT/Computing
Networking

Education
Science
System Developers

Our Computer Science specification will above all else be relevant to the modern and changing world of computing. The new specification will:

- Focus on programming, building on our GCSE Computing and emphasise the importance of computational thinking as a discipline.
- Have an expanded maths focus, much of which will be embedded within the course.
- Put computational thinking at its core, helping students to develop the skills to solve problems, design systems and understand human and machine intelligence.
- Allow student to apply the academic principles learned in the classroom to real world systems in an exciting and engaging manner.
- Give students a clear progression into higher education, as the course was designed after consultation with members of BCS, CAS and top universities.

SPECIFIC ENTRY REQUIREMENTS

- Grade 6 in GCSE Computer Science if studied at GCSE, if not:
- Grade 6 in GCSE English and Maths
- Preferably some knowledge in languages such as Python, C, C+, C# and Java

COURSE DETAILS

OCR Specification Computer Science – AS Level

Subject Content

- The characteristics of contemporary processors, input, output and storage devices
- Software and software development
- Programming and Exchanging data
- Data types, data structures and algorithms
- Legal, moral, ethical and cultural issues
- Elements of computational thinking
- Problem solving and programming

You will study 2 Units as follows:

Paper 1: Computing Principles 1

- Written exam: 1hour 15 minutes
- 70 Marks
- 50% of level

Paper 2: Algorithms and problem solving 2

- Written exam: 1hour 15 minutes
- 70 Marks
- 50% of level

OCR Specification Computer Science – A Level

Subject Content

- The characteristics of contemporary processors, input, output and storage devices
- Software and software development
- Exchanging data
- Data types, data structures and Algorithms to solve problems and standard algorithms
- Legal, moral, cultural and ethical issues
- Elements of computational thinking
- Problem solving and programming

You will study 3 Units as follows:

Paper 1: Computer Systems 01

- Written exam: 2 hour 30 minutes
- 140 marks in total
- 40% of level

Paper 2: Algorithms and Programming 02

- Written exam: 2 hour 30 minutes
- 140 marks in total
- 40% of Level.
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Programming Project:

- Analysis of the problem
- Design of the solution
- Developing the solution
- Evaluation
- 70 Marks
- 20% of Level